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# "High Frequency Ceramic Solutions"

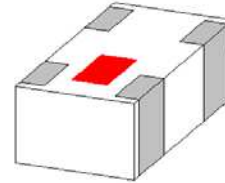
Miniature 2.45GHz 1:1 RF Balun

P/N 2450BL07A0050

Detail Specification: 08/02/12

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| General Specifications          |               |
|---------------------------------|---------------|
| Part Number                     | 2450BL07A0050 |
| Frequency (MHz)                 | 2400~2500     |
| Unbalanced Impedence            | 50 Ω          |
| Differential Balanced Impedance | 50 Ω          |
| Insertion Loss                  | 1.0 dB max.   |
| Return Loss                     | 9.5 min.      |
| Phase Difference (degree)       | 180 ± 10      |
| Amplitude Difference            | 2.0 dB max.   |
| Operating Temperature           | -40 to +85°C  |
| Power Capacity                  | 2 Watt max.   |



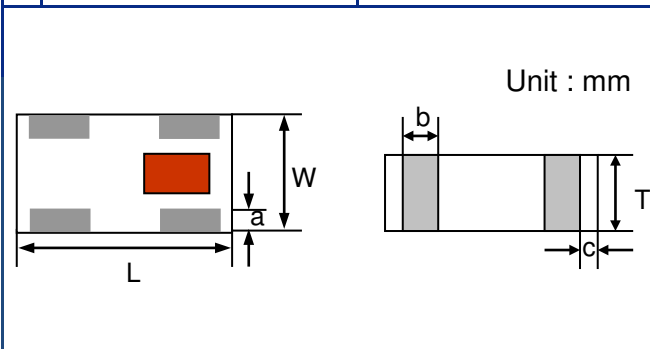
|                                |                                       |
|--------------------------------|---------------------------------------|
| Recommended Storage Conditions | +5 to +35 °C,<br>Humidity<br>45~75%RH |
| Reel Quantity                  | 10,000                                |
| Storage Period                 | 18 months max.                        |

## Part Number Explanation

|            |                   |   |               |                            |
|------------|-------------------|---|---------------|----------------------------|
| P/N Suffix | Packing Style     | Bulk                                    | Suffix = S    | eg. 2450BL07A0050S         |
|            |                   | T & R (10000 pcs)                       | Suffix = T    | eg. 2450BL07A0050T         |
|            | Termination style | 100% Tin                                | Suffix = None | eg. 2450BL07A0050 (T or S) |
|            | Evaluation Board  | 2450BL07A0050-EBSMA (x3 SMA Connectors) |               |                            |

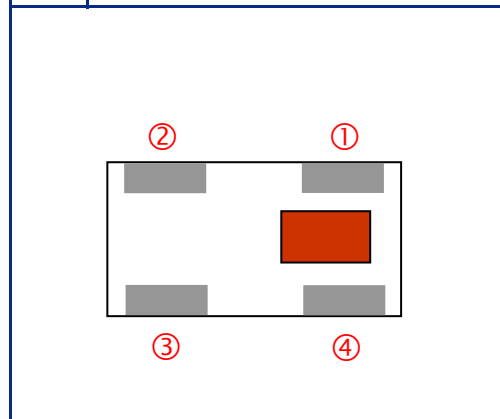
## Mechanical Dimensions

|   | In                     | mm                  |
|---|------------------------|---------------------|
| L | 0.039 ± 0.004          | 1.00 ± 0.10         |
| W | 0.020 ± 0.004          | 0.50 ± 0.10         |
| T | 0.015 ± 0.020          | 0.37 ± 0.50         |
| a | 0.004 + 0.004 / -0.002 | 0.10 + 0.10 / -0.05 |
| b | 0.010 + 0.004 / -0.002 | 0.25 + 0.10 / -0.05 |
| c | 0.004 + 0.004 / -0.002 | 0.10 + 0.10 / -0.05 |



## Terminal Configuration

| No. | Function             |
|-----|----------------------|
| 1   | Unbalanced Port (IN) |
| 2   | Balanced Port (OUT1) |
| 3   | Balanced Port (OUT2) |
| 4   | GND                  |



# "High Frequency Ceramic Solutions"

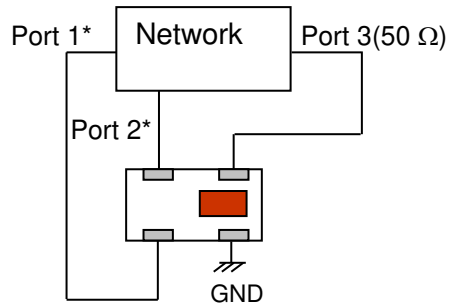
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P/N 2450BL07A0050

Detail Specification: 08/02/12

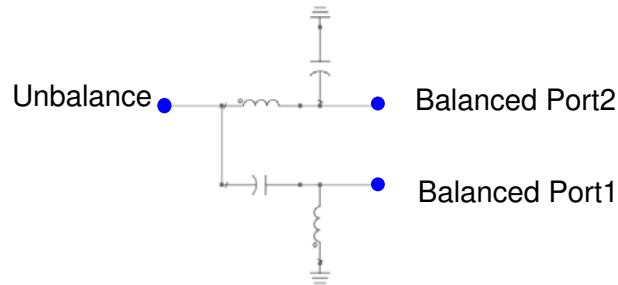
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## Measuring Diagram



Port 3: Unbalanced Port  
 Ports 1 and 2: Balanced Port  
 $IL = S_{ds21}$   
 $RL = S_{ss11}$   
 $Amp\_balance = dB(S(2,3)/S(1,3))$   
 $Phase\_balance = Phase(S(2,3)/S(1,3))$   
 \*Impedance for ports 1 and 2 = Balanced Impedance/2  
 \*\*E5071B from Agilent

## Equivalent Circuit



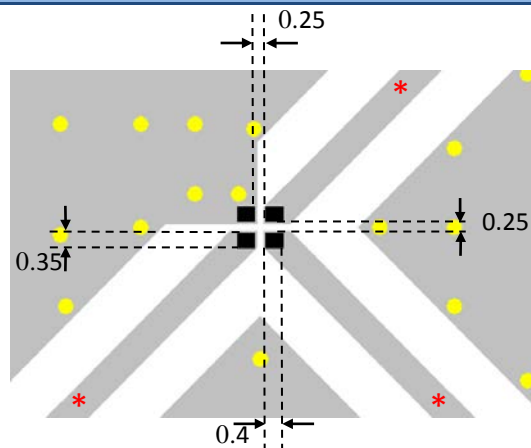
## Mounting Considerations

\* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

### LEGEND

- Solder Resist
- Land
- Through-hole (φ0.3)

Unit : mm



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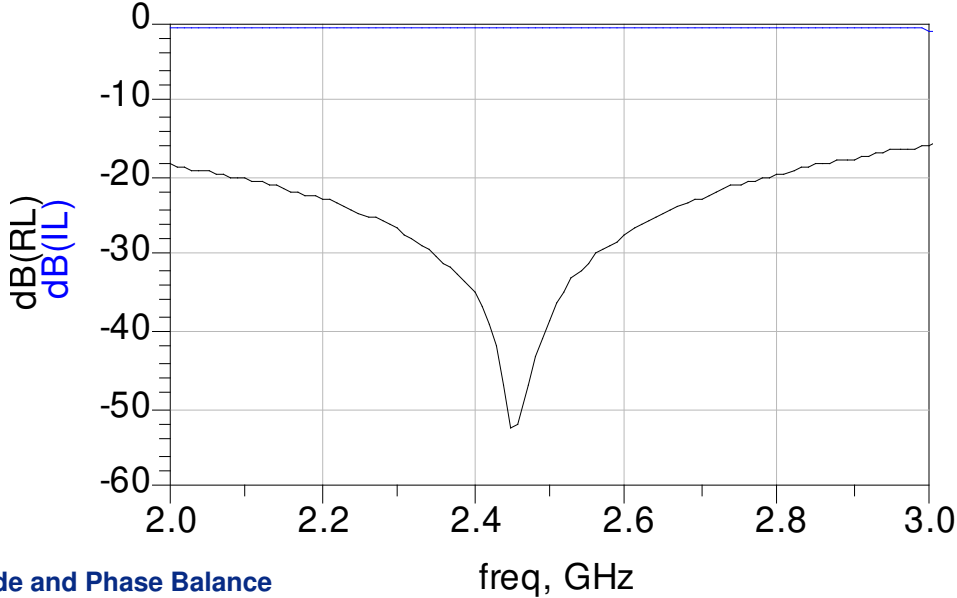
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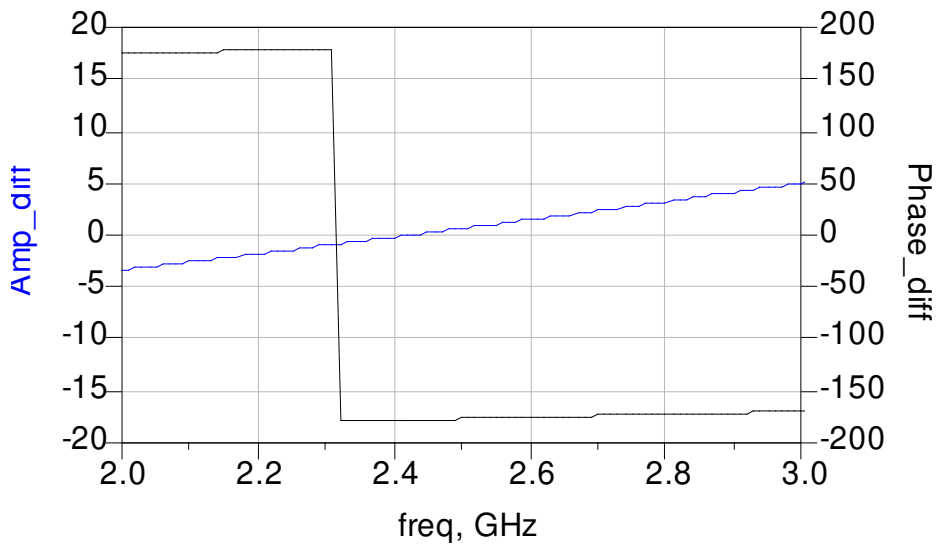
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## Typical Electrical Performance (T=25°C)

### Insertion and Return Loss



### Amplitude and Phase Balance



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